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09/768,974	01/23/2001	Ken Chang	Q00-1101-US1	2313

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David M. Sigmond
Maxtor Corporation
2452 Clover Basin Drive
Longmont, CO 80503

EXAMINER

BLOUIN, MARK S

ART UNIT

PAPER NUMBER

2653

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8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/768,974

Applicant(s)

CHANG, KEN

Examiner

Mark Blouin

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 and 35-39 is/are rejected.
- 7) ☒ Claim(s) 30-34 and 40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Detailed Action

Response to Amendment

- Amended Claims 1,13,20,21 and newly added Claims 23-40 are acknowledged.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,2,10,11,12, 23, 24-27, 28-30, 35, and 37-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Tohkairin (USPN 5,963,398).
3. Regarding Claims 1, 2, 10, 11, 12, 23, and 37, Tohkairin shows a disk drive (Fig. 3) with a head stack assembly (Fig. 27) including a positioner (20) for moving an E-block (Fig. 9) and a data transducer (Fig. 3, (14-1)) of a disk drive relative to a storage disk (Fig. 3), the E-block having a longitudinal axis, the positioner comprising a magnet assembly (Figs. 12 and 13), including an upper and lower magnetic array, producing a magnetic field and a coil array (Fig. 27, (90)) that couples to the E-block and is positioned near the magnet assembly, the coil array being generally a D-shaped loop including a first segment (Fig. 14, (90-3)) that is positioned substantially perpendicular to the longitudinal axis of the E-block, the first segment being adapted to interact with the magnetic field to move the E-block relative to the storage disk and is substantially linear, wherein the only portion of the coil array that interacts with the magnetic field of the magnet assembly when the coil array is electrically excited is positioned substantially perpendicular to the longitudinal axis of the E-block (Fig. 27).

4. Regarding Claims 24-27, Tohkairin shows (Fig. 5) the coil array (90) includes a first segment and second segment, the first segment is substantially linear and the second segment forms an arc (See Examiner's Drawing), first segment is substantially perpendicular to a longitudinal axis of a head stack assembly (Fig.1, (26)) that includes the data transducer (Fig. 3, (14-1)), the second segment forms an arc that is centered at a pivot center of the head stack assembly, and the first and second segments are positioned symmetrically about the longitudinal axis.
5. Regarding Claims 28-30 and 38, Tohkairin shows (Fig.1) the positioner wherein the first segment includes a first portion, a second portion and a center portion therebetween, the first and second portions are positioned between the magnetic arrays, and the center portion is not positioned between the magnetic arrays, wherein the magnetic arrays each include an inner side, an outer side, and a pair of side wings therebetween, the inner side faces towards the data transducer (14-1) and forms an arc, and the outer side faces away from the data transducer, wherein the inner side forms an arc that is centered at a pivot center for the data transducer (See Examiner's Drawing).
6. Regarding Claims 35 and 39, Tohkairin shows (Fig. 1) the positioner wherein the magnetic arrays extend a first distance parallel to a longitudinal axis of a head stack assembly that includes the data transducer, the coil array extends a second distance parallel to the longitudinal axis, and the first distance is greater than the second distance.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-9 and 13-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tohkairin (USPN 5,963,398) in view of Kotani (USPN 5,119,253).
9. Regarding Claims 3-9 and 13-19, Tohkairin shows all the features described, *supra*, in addition to a control system (Fig. 4) that directs current to the coil array, being a generally shaped loop, to move the data transducer relative to the target track and electrically excites the first portion interacting with the magnetic field to generate a first force and the second portion interacting with the magnetic field to generate a second force that are substantially parallel, equal in magnitude, and opposite in direction. Tohkairin does not show a first portion positioned on one side of the longitudinal axis of the E-block, and a second portion positioned on an opposite side of the longitudinal axis E-block, wherein the first and second portions, substantially symmetrical relative to the longitudinal axis, are adapted to interact with the magnetic field to move the E-block relative to the storage disk, an upper magnet array and a lower magnet array, wherein the first and second portions are positioned substantially between the upper and lower magnet arrays, a center portion being positioned between the first and second portions, the center portion electrically connecting the first portion to the second portion, the center portion being positioned such that the center portion does not substantially interact with the magnetic field when the center portion is electrically excited, and coil array including a second segment that is connected to the first segment, the second segment being positioned relative to the magnet assembly such that the second segment does not interact with the magnetic field when the second segment is electrically excited.

10. Kotani (Fig. 2) shows a first portion (66) positioned on one side of the longitudinal axis of the E-block, and a second portion (67) positioned on an opposite side of the longitudinal axis of the E-block, wherein the first (66) and second (67) portions, substantially symmetrical relative to the longitudinal axis, are adapted to interact with the magnetic field to move the E-block relative to the storage disk; an upper magnet array and a lower magnet array (Fig. 3), wherein the first and second portions are positioned substantially between the upper and lower magnet arrays, a center portion (64) being positioned between the first (66) and second (67) portions, the center portion (64) electrically connecting the first portion to the second portion, the center portion being positioned such that the center portion does not substantially interact with the magnetic field when the center portion is electrically excited (Col. 2, lns. 1-3), and coil array, being a generally D-shaped loop including a second segment (63) that is connected to the first segment, the second segment being positioned relative to the magnet assembly such that the second segment does not interact with the magnetic field when the second segment is electrically excited (Col. 2, lns. 1-3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the disk apparatus of Tohkairin with the magnet and coil assembly as taught by Kotani described above. The rationale is as follows: One of ordinary skill in the art at the time the invention was made would have been motivated to provide the disk apparatus of Tohkairin with the magnet and coil assembly as taught by Kotani in lieu of the magnet and coil assembly of Tohkairin in order to accurately position a data transducer.

11. Regarding Claims 20-22, drawn to a method of retrieving data from a target track on a rotating storage disk of a disk drive using the aforementioned apparatus, the limitations of the

Art Unit: 2653

method claims are met and are unpatentable over Tohkairin in view of Kotani when the apparatus operates.

Allowable Subject Matter

12. Claims 30-34 and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

13. Applicant's arguments filed December 10, 2002 have been fully considered but they are not persuasive.

Applicant asserts on Page 12 :

“ Movable coil 90 is a generally rectangular shaped loop ...” while the Applicant’s invention discloses “... a generally D-shaped loop”

The Examiner maintains that Tohkairin clearly shows a “D-shaped” coil as part of the positioner in the disk apparatus. Therefore, the rejection of Claims 1,13,20, 21 and associated Claims are upheld.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period


Art Unit: 2653

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Blouin whose telephone number is (703) 305-5629. The examiner can normally be reached M-F, 6:00 am – 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful the examiner's supervisor, William Korzuch can be reached at (703) 305-6137. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314 for regular and After Final communications.

Any inquiry of general nature or relating to the status of application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.



Mark Blouin
Patent Examiner
Art Unit 2653
January 28, 2003



WILLIAM KORZUCH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600